



# Tooling Directory

2021

## Introduction

The Aerospace Technology Institute (ATI) welcomed tooling end users and suppliers to an online workshop in April 2021 to discuss the current and future needs of the tooling requirements in aerospace. This event attracted a total of 102 attendees including representatives from 71 tooling companies. The workshop featured 33 guest speakers, presenters and chairs from trade bodies, RTOs, and industry.

This directory is a result of that workshop and provides a view of the UK's capabilities and potential tooling providers for future R&D and production opportunities.

To support the Aerospace Growth Partnership's (AGP) request for action to address the gaps and future requirements of the industry, the ATI initiated a tooling working group which ran from March 2020 to November 2020. The working group consisted of a combination of tooling suppliers, end-users, and research technology organisations. The working group was successful in delivering an industry-led document of aerospace tooling requirements and challenges, a technology roadmap and a list of priority topic areas that formed the building blocks of the tooling workshop.

The ATI remains committed to supporting the tooling industry to develop innovative technologies to meet challenges for future aerostructures through our funding projects. [Companies with R&D projects are encouraged to get in touch with the ATI to find out more about how to get access to our existing funding programs.](#)



## Company Name

Aertec Solutions

## First Name

Nathan

## Surname

Ogden

## Email

[nogden@aertecsolutions.com](mailto:nogden@aertecsolutions.com)

### TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>
Other:	

### TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input checked="" type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input checked="" type="radio"/>
Tooling material supplier	<input type="radio"/>

### PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Company Name

Ai Build Ltd

## First Name

Daghan

## Surname

Cam

## Email

[d.cam@ai-build.com](mailto:d.cam@ai-build.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other: <b>Additive tooling</b>	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input checked="" type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Additional Information

Ai Build is a technology company specializing in large scale additive manufacturing for composite tooling in Aerospace/Automotive/F1 industries. Using our technology reduces the cost and production times significantly. Our R&D factory is located in East London, available for proof of concept production of additive tooling.





## Company Name

AMRC, University of Sheffield

## First Name

Rob

## Surname

Hewison

## Email

[r.hewison@amrc.co.uk](mailto:r.hewison@amrc.co.uk)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input type="radio"/>
Dies and cutting tools	<input checked="" type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input checked="" type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input checked="" type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input checked="" type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Additional Information

Please visit [www.amrc.co.uk](http://www.amrc.co.uk) for a general view of our capabilities and contact me directly if you have any enquiries.

## Company Name

Ascent Aerospace

## First Name

George

## Surname

Kenny

## Email

[george.kenny@ascentaerospace.com](mailto:george.kenny@ascentaerospace.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input checked="" type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input checked="" type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>
Other: <b>Additively Manufactured Tooling</b>	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input checked="" type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input checked="" type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Company Name

Axillium Group

## First Name

Will

## Surname

Searle

## Email

[Will.Searle@Axillium.com](mailto:Will.Searle@Axillium.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input type="radio"/>
Bespoke complex tooling	<input type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other: <b>R&amp;D Development of high rate tooling</b>	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input checked="" type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input checked="" type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other: <b>R&amp;D Development of high rate products</b>	

## Additional Information

Axillium are an end-to-end Innovation Management Partner. We help knowledge-intensive companies collaborate and innovate across Aerospace, Automotive & Defence.

## Company Name

Carbon ThreeSixty Ltd

## First Name

Garry

## Surname

Scott

## Email

[garry.scott@carbonthreesixty.com](mailto:garry.scott@carbonthreesixty.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input checked="" type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input checked="" type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input checked="" type="radio"/>
Self-heated tooling	<input checked="" type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input checked="" type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input checked="" type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input checked="" type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other:	

## Additional Information

Carbon ThreeSixty are specialists in composite liquid moulding technologies from low to high volume.



## Company Name

CFP Composites Ltd

## First Name

Stephen

## Surname

Philipson

## Email

[stephen.philipson@cfpcomposites.com](mailto:stephen.philipson@cfpcomposites.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input checked="" type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>

Other: **Direct to Part Machinable Carbon Tooling Material - (360) for the manufacture of above type tools plus much more.**

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>

Other: **Product used to make mould tools for the above type of components including UAV structures.**

## Company Name

Codem Composites Ltd

## First Name

Kevin

## Surname

Doherty

### TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

### TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input checked="" type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

### PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Company Name

Composites Evolution

## First Name

Roger

## Surname

Elliott

## Email

[roger.elliott@compositesevolution.com](mailto:roger.elliott@compositesevolution.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input type="radio"/>
Bespoke complex tooling	<input type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input checked="" type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input checked="" type="radio"/>
Tooling material supplier	<input checked="" type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other:	

## Company Name

Cronite Castings Ltd

## First Name

Peter

## Surname

White

## Email

[peter.white@cronite-group.com](mailto:peter.white@cronite-group.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input type="radio"/>
Bespoke complex tooling	<input type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input checked="" type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	



## Company Name

Datum Tool Design

## First Name

Michael

## Surname

Maguire

## Email

[michael@datum-design.com](mailto:michael@datum-design.com)

### TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input checked="" type="radio"/>
Inflatable mandrels	<input checked="" type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input checked="" type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input checked="" type="radio"/>
Self-heated tooling	<input checked="" type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>
Other:	

### TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input checked="" type="radio"/>
Associations, Third Parties, Services & Consultants	<input checked="" type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input checked="" type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input checked="" type="radio"/>

### PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Company Name

Desoutter UK

## First Name

Scott

## Surname

Howard

## Email

[scott.howard@desouttertools.com](mailto:scott.howard@desouttertools.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input type="radio"/>
Dies and cutting tools	<input checked="" type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other: <b>Process control solutions</b>	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other: <b>Suppliers to all listed</b>	

## Additional Information

Please see more detail at [www.desouttertools.com](http://www.desouttertools.com) or contact me on **07971 650556** as we have a dedicated team available to support you with their wealth of knowledge or in demonstrating our tooling and process control solutions.



## Company Name

DFS Composites Limited

## First Name

Feras

## Surname

Yosef

## Email

[fer@dfscomposites.com](mailto:fer@dfscomposites.com)

### TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input checked="" type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>
Other:	

### TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input checked="" type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input checked="" type="radio"/>
Tooling material supplier	<input checked="" type="radio"/>

### PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Company Name

Expert Tooling & Automation

## First Name

Richard

## Surname

Weston

## Email

[richard.weston@exta.co.uk](mailto:richard.weston@exta.co.uk)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>

Other: **Composite Tooling & Assembly**

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input checked="" type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input checked="" type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input checked="" type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>

Other: **Rotor Assembly Facilities & Tooling**

## Additional Information

Expert Tooling & Automation is an established aerospace sector supplier in the UK, Europe and Asia, and a UK leader of manufacturing automation, tooling, special purpose machinery and multi-robotic turnkey systems. Building lasting relationships with customers is a cornerstone of our business. ETA develops production methods for manufacture and assembly systems for the production of clients' products, ranging from engine flow lines and workstations, MRO facilities, wing/fuselage/ribs/stringers assembly, robotic drilling and riveting, to small component assembly aids and fixtures. Our team of automation specialists and comprehensive facilities allow us to offer complete and bespoke solutions from design to installation. Our HQ is in Coventry, West Midlands.





## Company Name

FDM DIGITAL SOLUTIONS LTD

## First Name

Graeme

## Surname

Bond

## Email

[graeme@fdmdigitalsolutions.co.uk](mailto:graeme@fdmdigitalsolutions.co.uk)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other:	

## Additional Information

FDM Digital Solutions specialise in high performance, high temperature large size 3D printing along with design and manufacture of jigs, low volume press tooling, low volume manufacture of aerospace approved 3D printed parts & design for Additive Manufacture. we have a large capacity of Stratasys & HP Multi-jet fusion polymer and metal 3D print technologies.



## Company Name

GTMA

## First Name

Roger

## Surname

Onions

## Email

[Roger@gtma.co.uk](mailto:Roger@gtma.co.uk)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input checked="" type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input checked="" type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input checked="" type="radio"/>
Self-heated tooling	<input checked="" type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>

Other: **Our Membership**

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input checked="" type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input checked="" type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>

Other: **Our Membership**

## Additional Information

The GTMA is a Trade Association and our members are involved in all of the above.

## Company Name

Harcourt Industrial Inc

## First Name

Tony

## Surname

Van As

## Email

[tony.vanas@harcourt.co](mailto:tony.vanas@harcourt.co)

### TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

### TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input checked="" type="radio"/>
Tooling material supplier	<input checked="" type="radio"/>

### PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

### Additional Information

Harcourt have developed a new system for aerospace assembly fixtures/ jigs. Eliminates the cost and lead times associated with traditional fabricated tooling and is re-configurable/ re-imaginable. Uses are (but not limited to) drill jigs, assembly tooling, friction stir weld fixtures.

## Company Name

Haydale

## First Name

Matthew

## Surname

Thornton

## Email

[matthew.thornton@haydale.com](mailto:matthew.thornton@haydale.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input type="radio"/>
Bespoke complex tooling	<input type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input checked="" type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input checked="" type="radio"/>

## PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other:	



## Company Name

Hyde Group Ltd

## First Name

Paul

## Surname

Cox

## Email

[pcox@hydegroupp.com](mailto:pcox@hydegroupp.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input checked="" type="radio"/>
Inflatable mandrels	<input checked="" type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input checked="" type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input checked="" type="radio"/>
Self-heated tooling	<input checked="" type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input checked="" type="radio"/>
Associations, Third Parties, Services & Consultants	<input checked="" type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input checked="" type="radio"/>
RTOs and academia	<input checked="" type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input checked="" type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input checked="" type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Company Name

Investment Casting Systems Ltd

## First Name

Richard

## Surname

Wilson

## Email

[richard@investmentcastingsystems.co.uk](mailto:richard@investmentcastingsystems.co.uk)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input checked="" type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other:	

## Company Name

Jaivel Aerospace Limited

## First Name

Vipul

## Surname

Vachhani

## Email

[vipul@jaivel.com](mailto:vipul@jaivel.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input checked="" type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input checked="" type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Additional Information

Jaivel Aerospace is a manufacturing technology organisation with expertise in improving performance of advanced manufacturing programs. The winning combination of our process and tooling businesses apply technology and innovation to improve performance of manufacturing operations, whilst our product business offers the option to make your product. Our team's relentless pursuit of offering simplified and intuitive solutions has inspired the trust of Global 10 aerospace clients. With one goal: enabling our customers to succeed, we measure our success by the value we create for our customers.



## Company Name

Manufacturing Technology Centre

## First Name

Sandeep

## Surname

Samanthula

## Email

[sandeep.samanthula@the-mtc.org](mailto:sandeep.samanthula@the-mtc.org)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>
Other: <b>Tooling repair</b>	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input checked="" type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input checked="" type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Company Name

MetLase Ltd

## First Name

Richard

## Surname

Gould

## Email

[richard.gould@metlase.com](mailto:richard.gould@metlase.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input checked="" type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input checked="" type="radio"/>
Tooling integrator	<input checked="" type="radio"/>
Tooling material supplier	<input checked="" type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input checked="" type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Company Name

National Composites Centre (NCC)

## First Name

Enrique

## Surname

Garcia

## Email

[enrique.garcia@nccuk.com](mailto:enrique.garcia@nccuk.com)

### TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input checked="" type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input checked="" type="radio"/>
Self-heated tooling	<input checked="" type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>
Other:	

### TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input checked="" type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

### PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input checked="" type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Company Name

Neos International Limited

## First Name

Ian

## Surname

Eaves

## Email

[ian.eaves@neosintl.com](mailto:ian.eaves@neosintl.com)

### TOOLING SPECIALITIES

Assembly and fixture tooling	●
Bespoke complex tooling	●
Dies and cutting tools	●
Inflatable mandrels	●
Large scale tools (greater than 10m)	●
Press moulding	●
Rapid product development	●
Reconfigurable tooling	●
Reusable silicone testing	●
Self-heated tooling	●
Smart tooling	●
Systems, robotic and automation	●

Other: **Large scale Additive Manufacturing**

### TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	●
Associations, Third Parties, Services & Consultants	●
Devices and sensors for process measurement and management (metrology, process measurement, etc)	●
RTOs and academia	●
Tooling designer	●
Tooling manufacturer	●
Tooling end-user	●
Tooling integrator	●
Tooling material supplier	●

### PRODUCTS

Cabin interiors	●
Empennage	●
Engine components	●
Fan/propeller/rotor system	●
Fuselage	●
Landing gear systems	●
Nacelle & pylon	●
Wings	●

Other: **Automotive & Nuclear applications**



## Company Name

NMIS

## First Name

Crawford

## Surname

Cullen

## Email

[crawford.cullen@strath.ac.uk](mailto:crawford.cullen@strath.ac.uk)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input type="radio"/>
Bespoke complex tooling	<input type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input checked="" type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other:	

## Company Name

Northern Ireland Technology Centre, Queens University

## First Name

Colm

## Surname

Higgins

## Email

[c.j.higgins@qub.ac.uk](mailto:c.j.higgins@qub.ac.uk)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input type="radio"/>
Bespoke complex tooling	<input type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other: <b>Research</b>	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input checked="" type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other: <b>Research</b>	

## Company Name

Plyable

## First Name

Elaine

## Surname

Winchester

## Email

[e.winchester@plyable.com](mailto:e.winchester@plyable.com)

### TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

### TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

### PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other:	

## Company Name

Prodtex

## First Name

Ricky

## Surname

Cartwright

## Email

[ricky.Cartwright@Prodtex.com](mailto:ricky.Cartwright@Prodtex.com)

### TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>
Other:	

### TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input checked="" type="radio"/>
Tooling material supplier	<input checked="" type="radio"/>

### PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input checked="" type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

### Additional Information

Prodtex develops innovative and sustainable industry 4.0 manufacturing solutions focused on next-gen manufacturing methods, processes, workflows, digital simulations and intelligent automation. Their solutions are proven across multiple sectors. Prodtex's steel reconfigurable Boxjoint fixturing technology is in use at the MTC and in multiple industries. Reconfigurable solutions save costs, shorten design and make manufacturing cells more flexible. Prodtex offer a design to delivery service for their reconfigurable technologies. Prodtex offers accurate, modular, affordable and reconfigurable robot solutions, such as the Hexapod and TAU robots. They also offer consultancy to demonstrate robotic applications, virtual commissioning, digital twin solutions and offline simulation within 3DEXPERIENCE DELMIA.



## Company Name

Productive Machines

## First Name

Erdem

## Surname

Ozturk

## Email

[erdem@productivemachines.co.uk](mailto:erdem@productivemachines.co.uk)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input type="radio"/>
Bespoke complex tooling	<input type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input checked="" type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input checked="" type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input checked="" type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Additional Information

Productive Machines delivers software that maximises sustainability of machining processes by reducing costs, eliminating waste and improving productivity. By applying simulations in machining processes, production time can be reduced considerably. Our product is a digital twin based learning platform composed of three linked modules: learning system, CAM plugin and Edge application. The learning system includes key information such as tool, work piece and process knowledge. The CAM plugin is integrated into existing CAM software. It hosts an offline digital twin of the machining process which can be used to identify potential problems and take counter measures while optimising the process. The Edge application includes an online digital twin for process monitoring and control.



## Company Name

Scaled

## First Name

Bob

## Surname

Bradley

## Email

[bob.bradley@scal3d.com](mailto:bob.bradley@scal3d.com)

### TOOLING SPECIALITIES

Assembly and fixture tooling	<input type="radio"/>
Bespoke complex tooling	<input type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input checked="" type="radio"/>
Other:	

### TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input checked="" type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

### PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input checked="" type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other: <b>We don't have a product ready but are starting to investigate this sector.</b>	

### Additional Information

We are investigating what value we can bring to the area of tooling, jigs and fixtures using our large-scale thermoplastic 3D printing technology for rapid product development.



## Company Name

SHD Composites

## First Name

Nigel

## Surname

Blatherwick

## Email

[nblatherwick@shdcomposites.com](mailto:nblatherwick@shdcomposites.com)

### TOOLING SPECIALITIES

Assembly and fixture tooling	<input type="radio"/>
Bespoke complex tooling	<input type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>

Other: **Low Cost , High Performance Composite Tooling Materials and Solutions.**

### TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input checked="" type="radio"/>

### PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	



## Company Name

Technical Composite Systems Ltd

## First Name

Michael

## Surname

Sloan

## Email

[msloan@technicalcompositesystems.com](mailto:msloan@technicalcompositesystems.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input checked="" type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input checked="" type="radio"/>
Self-heated tooling	<input checked="" type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input checked="" type="radio"/>
Tooling integrator	<input checked="" type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other:	

## Company Name

Toray TAC

## First Name

Jed

## Surname

Illsley

## Email

[j.illsley@toraytac-europe.com](mailto:j.illsley@toraytac-europe.com)

### TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input checked="" type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input checked="" type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

### TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input checked="" type="radio"/>

### PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	

## Company Name

Trelleborg Applied Technologies

## First Name

Kerry

## Surname

Lyons

## Email

[kerry.lyons@trelleborg.com](mailto:kerry.lyons@trelleborg.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input checked="" type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input checked="" type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input checked="" type="radio"/>

## PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other: <b>Supply Tooling</b>	

## Company Name

University of Bristol

## First Name

Carwyn

## Surname

Ward

## Email

[c.ward@bristol.ac.uk](mailto:c.ward@bristol.ac.uk)

### TOOLING SPECIALITIES

Assembly and fixture tooling	<input type="radio"/>
Bespoke complex tooling	<input type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other: <b>R&amp;D</b>	

### TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input checked="" type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

### PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other: <b>R&amp;D</b>	

## Company Name

Vertical Advanced Engineering

## First Name

Chris

## Surname

Harley

## Email

[chris.harley@vertical-advanced-engineering.com](mailto:chris.harley@vertical-advanced-engineering.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input checked="" type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input type="radio"/>
Press moulding	<input type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input type="radio"/>
Smart tooling	<input type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input checked="" type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input checked="" type="radio"/>
Tooling manufacturer	<input type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input type="radio"/>
Tooling material supplier	<input type="radio"/>

## PRODUCTS

Cabin interiors	<input type="radio"/>
Empennage	<input type="radio"/>
Engine components	<input type="radio"/>
Fan/propeller/rotor system	<input type="radio"/>
Fuselage	<input type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input type="radio"/>
Wings	<input type="radio"/>
Other: <b>Design services for products and tooling</b>	

## Company Name

Waukesha Foundry

## First Name

Joe

## Surname

Mannion

## Email

[joe.mannion@eurolink.com](mailto:joe.mannion@eurolink.com)

## TOOLING SPECIALITIES

Assembly and fixture tooling	<input type="radio"/>
Bespoke complex tooling	<input checked="" type="radio"/>
Dies and cutting tools	<input checked="" type="radio"/>
Inflatable mandrels	<input type="radio"/>
Large scale tools (greater than 10m)	<input checked="" type="radio"/>
Press moulding	<input checked="" type="radio"/>
Rapid product development	<input checked="" type="radio"/>
Reconfigurable tooling	<input type="radio"/>
Reusable silicone testing	<input type="radio"/>
Self-heated tooling	<input checked="" type="radio"/>
Smart tooling	<input checked="" type="radio"/>
Systems, robotic and automation	<input type="radio"/>
Other:	

## TOOLING SERVICES

Ancillary tooling suppliers (eg vac bags, tapes)	<input type="radio"/>
Associations, Third Parties, Services & Consultants	<input type="radio"/>
Devices and sensors for process measurement and management (metrology, process measurement, etc)	<input type="radio"/>
RTOs and academia	<input type="radio"/>
Tooling designer	<input type="radio"/>
Tooling manufacturer	<input checked="" type="radio"/>
Tooling end-user	<input type="radio"/>
Tooling integrator	<input checked="" type="radio"/>
Tooling material supplier	<input checked="" type="radio"/>

## PRODUCTS

Cabin interiors	<input checked="" type="radio"/>
Empennage	<input checked="" type="radio"/>
Engine components	<input checked="" type="radio"/>
Fan/propeller/rotor system	<input checked="" type="radio"/>
Fuselage	<input checked="" type="radio"/>
Landing gear systems	<input type="radio"/>
Nacelle & pylon	<input checked="" type="radio"/>
Wings	<input checked="" type="radio"/>
Other:	